

Antibiotic Stewardship Highlights and Impact from the Oregon HAI Program

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Agenda

- Background
 - Antibiotic resistance
- OHA HAI Program Activities
 - Long-term care (LTC)
 - Inpatient
 - Outpatient
 - Dental
 - Community
- Questions

Antibiotic Resistance

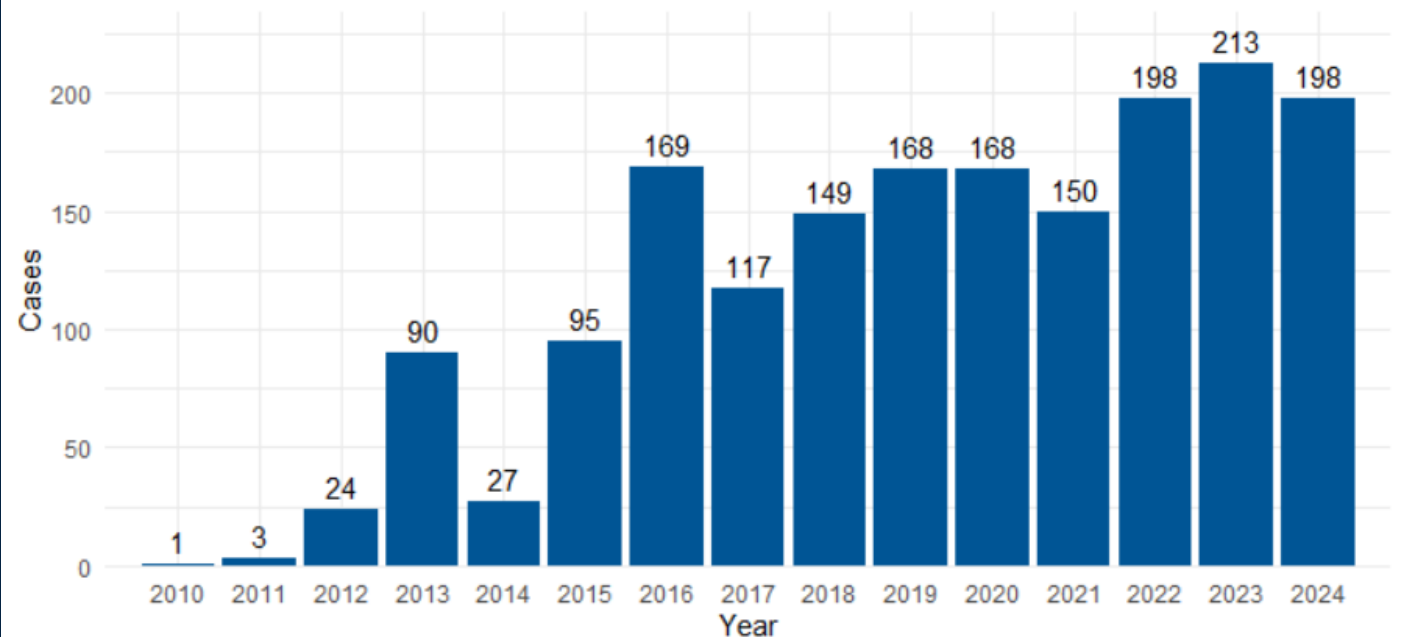
National Estimate

Each year, antibiotic-resistant bacteria and fungi cause at least an estimated:

 **2,868,700** infections

 **35,900** deaths

Figure 1. CRE cases of infection or colonization in Oregon residents by year, Nov 2010 - Dec 2024



Antibiotic Resistance

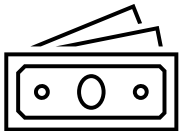
- **The primary driver of antibiotic resistance is antibiotic use.**
- Resistant infections can be difficult, and sometimes impossible, to treat, leading to:



Longer hospitalizations

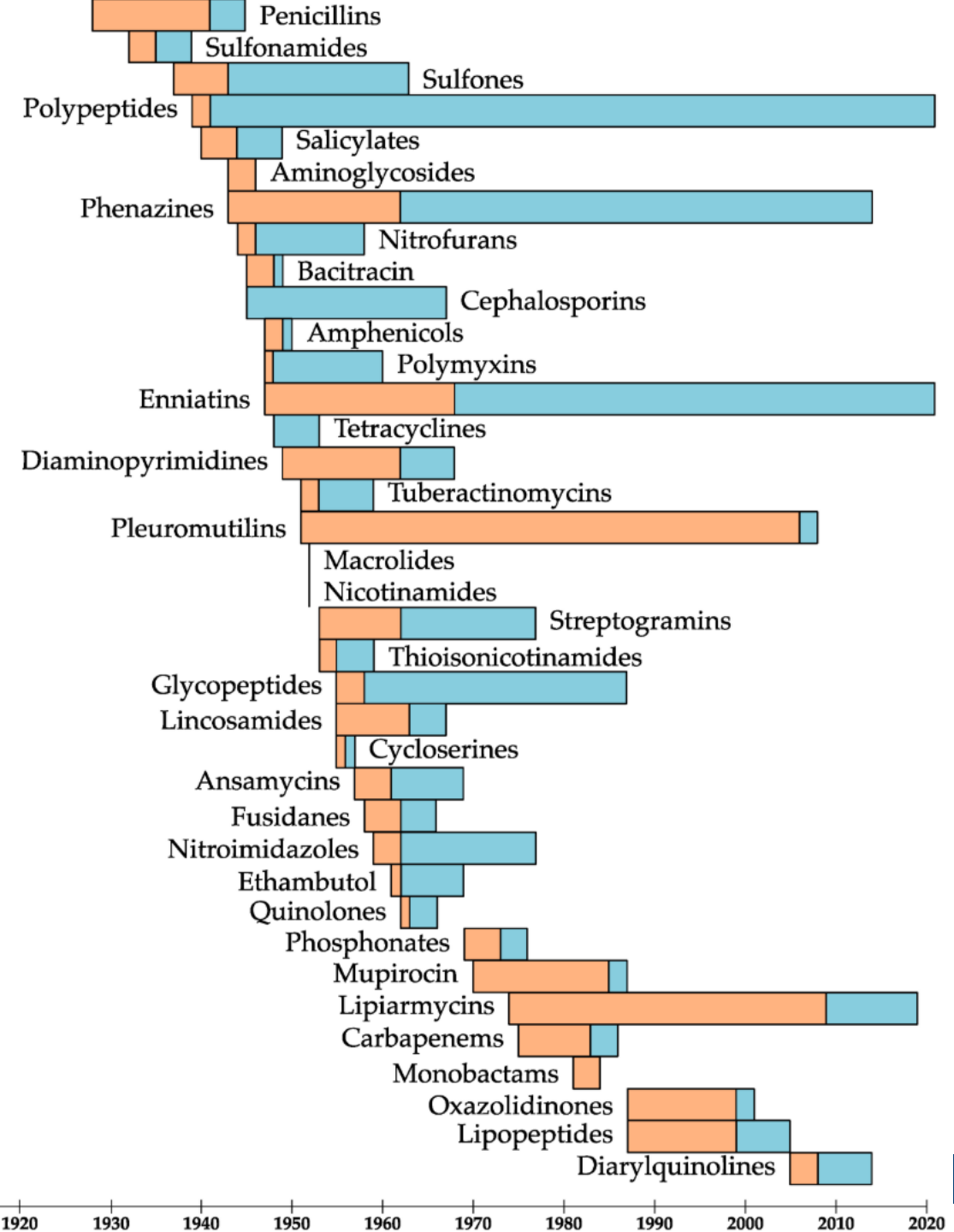
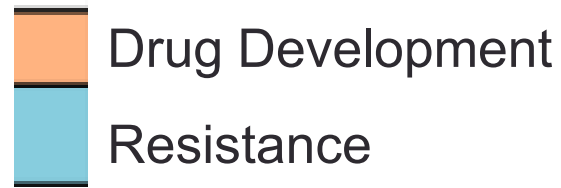


Worse patient outcomes (e.g., more complications and higher mortality)



Higher medical costs

Resistance outpaces drug development



Activity Snapshot

Inpatient

Antibiogram

Honor Roll

NHSN
Support

Outpatient

Statewide
Antibiotic Use
Reports

Prescriber
Feedback

LTC

Collaborative
Learning
Series

Infection
Prevention
Support

Community

Outreach

Education

Dental

Outreach

Education

Statewide Antibigram

- Oregon hospitals report their antibiotic use (AU) and antibiotic resistance (AR) data into the National Healthcare Safety Network (NHSN)
- AR data used to develop statewide antibiogram dashboard



Oregon Hospital Antibigram, 2025
Statewide Antibigram Based on Hospitals Submitting 2025
Antimicrobial Resistance Data to NHSN (n= 49 Hospitals)

Visit the OHA AWARE site

Submit Feedback

Download the Data

View Methods

Oregon's statewide antibiogram was developed from data submitted to the National Healthcare Safety Network Antibiotic Use and Resistance (NHSN AUR) Module. Hospitals (n=49) who submitted a full year of 2025 antimicrobial resistance data are included.

Learn more about the NHSN AUR Module: <https://www.cdc.gov/nhsn/psc/aur/index.html>

The total number of isolates tested as well as the percent susceptibility and number of isolates are shown below for each antibiotic and pathogen combination. Antibigram data is grouped by antibiotic class and separated by gram-negative and gram-positive organisms.

Use the filters below to look at the Oregon antibiogram data by geographic region, specimen type, age group, and hospital type.
The filters will apply to both gram-negative and gram-positive tables.

Filter to View by Region	Filter by Specimen Type	Filter by Age Group	Filter by Hospital Type	Filter by Antibiotic Class
(All)	(All)	(All)	(All)	(All)

2025 Oregon Antibigram, Gram-Negative Organisms

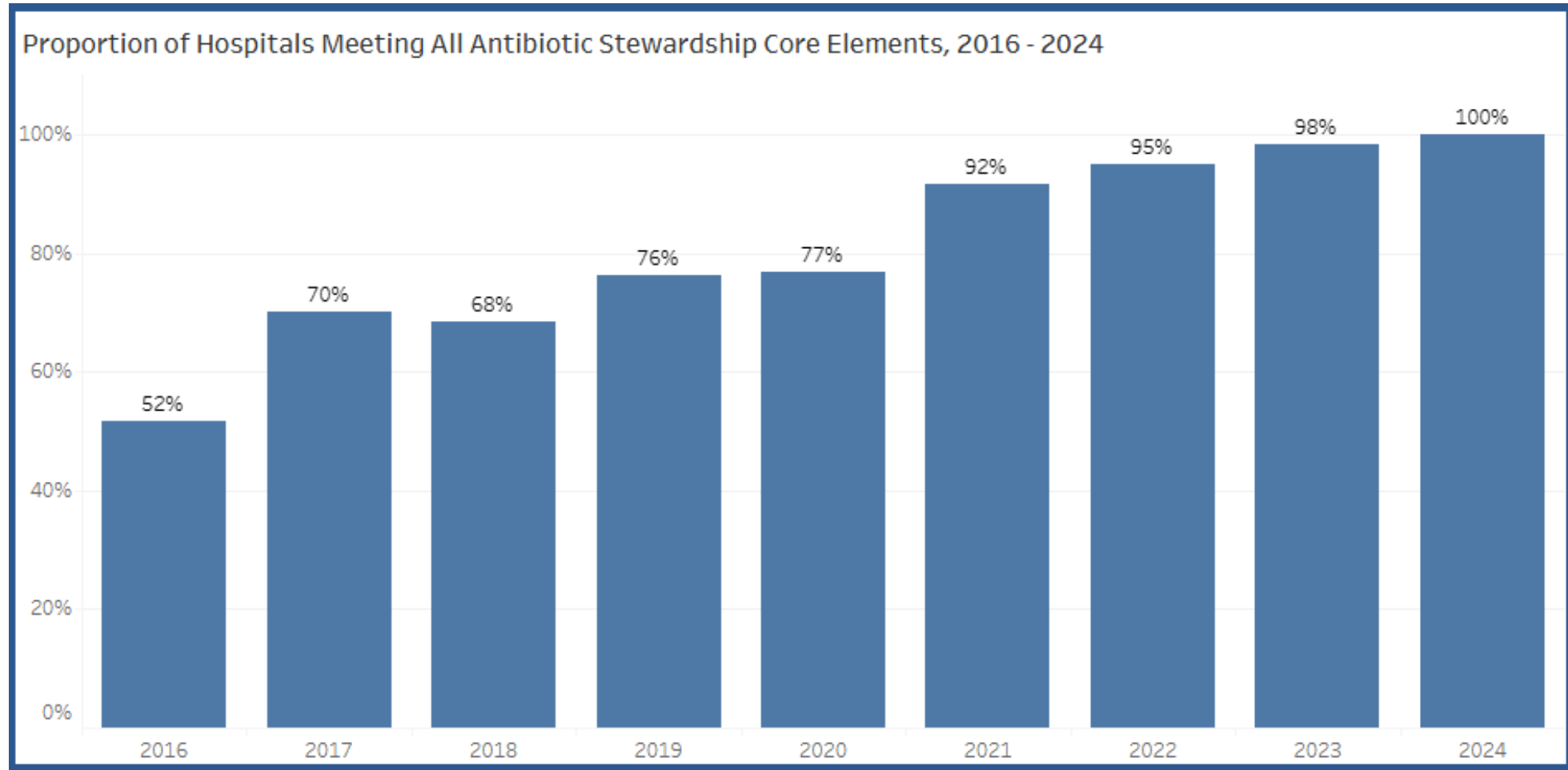
Percent Susceptible and Number of Isolates Tested

Viewing Region: All, Specimen Type: All, Age Group: All, Hospital Type: All

Antibiotic Class(es): Penicillins, Cephalosporins, Monobactams and 5 more

Pathogen	Number of Isolates Tested ¹	Penicillins				Cephalosporins				
		Ampicillin with Clavulanate	Ampicillin	Ampicillin/ sulbactam	Piperacillin with Ticarcillin	Cefazolin	Cefepime	Cefotaxime	Cefotetan	Cefoxitin
Acinetobacter baumannii & calcoaceticus-baumannii com...	211			93% n=171	85% n=163		88% n=190	81% n=32		
Acinetobacter spp.	378			93% n=306	86% n=242		91% n=317	71% n=48		
Citrobacter spp.	1,565	32% n=788	0% n=496	33% n=201	88% n=990	20% n=776	98% n=1,375	76% n=168		34% n=805
Enterobacter spp.	1,867	0% n=925	0% n=684	2% n=269	76% n=1,079	0% n=1,068	91% n=1,740	64% n=209		0% n=1,073
Escherichia coli	35,644	87% n=16,663	58% n=33,711	69% n=17,691	97% n=29,040	80% n=31,471	94% n=30,246	85% n=3,373	100% n=253	93% n=18,167

CDC Core Elements Of Antibiotic Stewardship

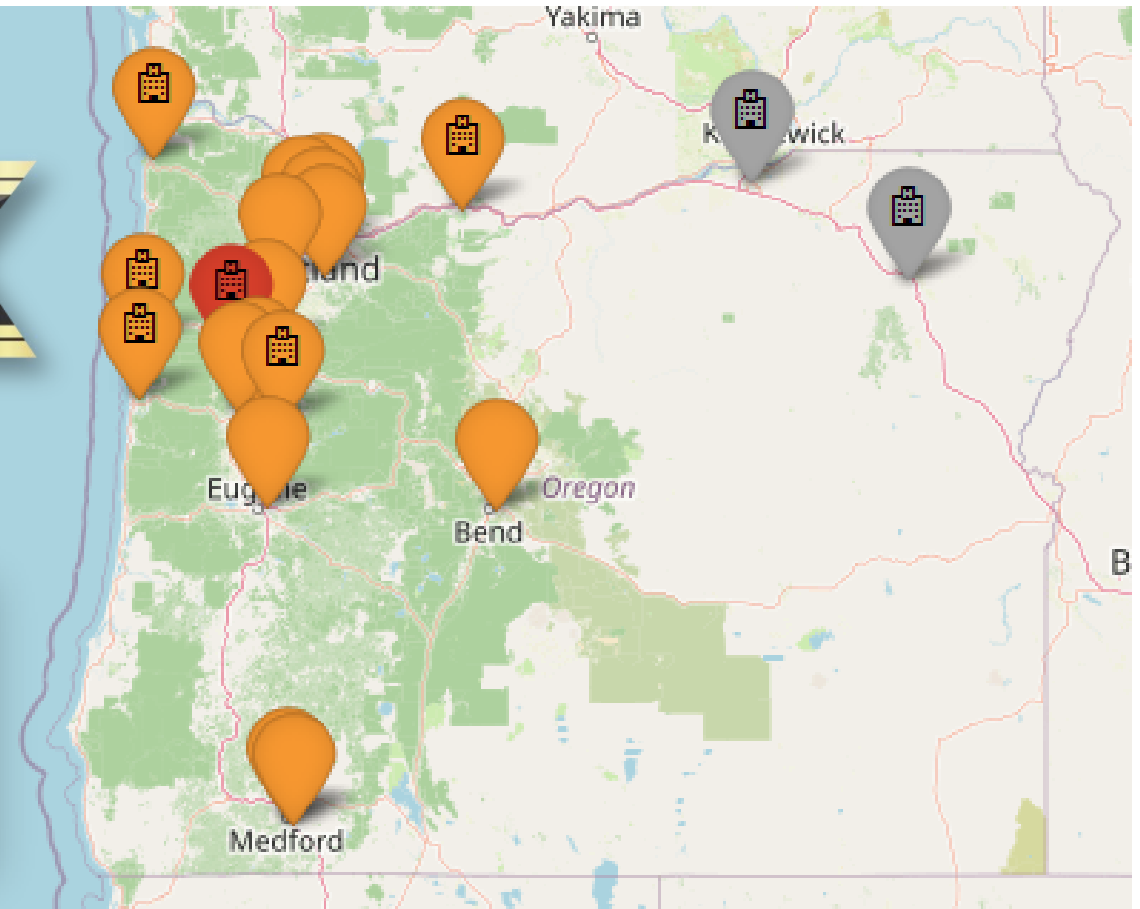


Hospital Honor Roll

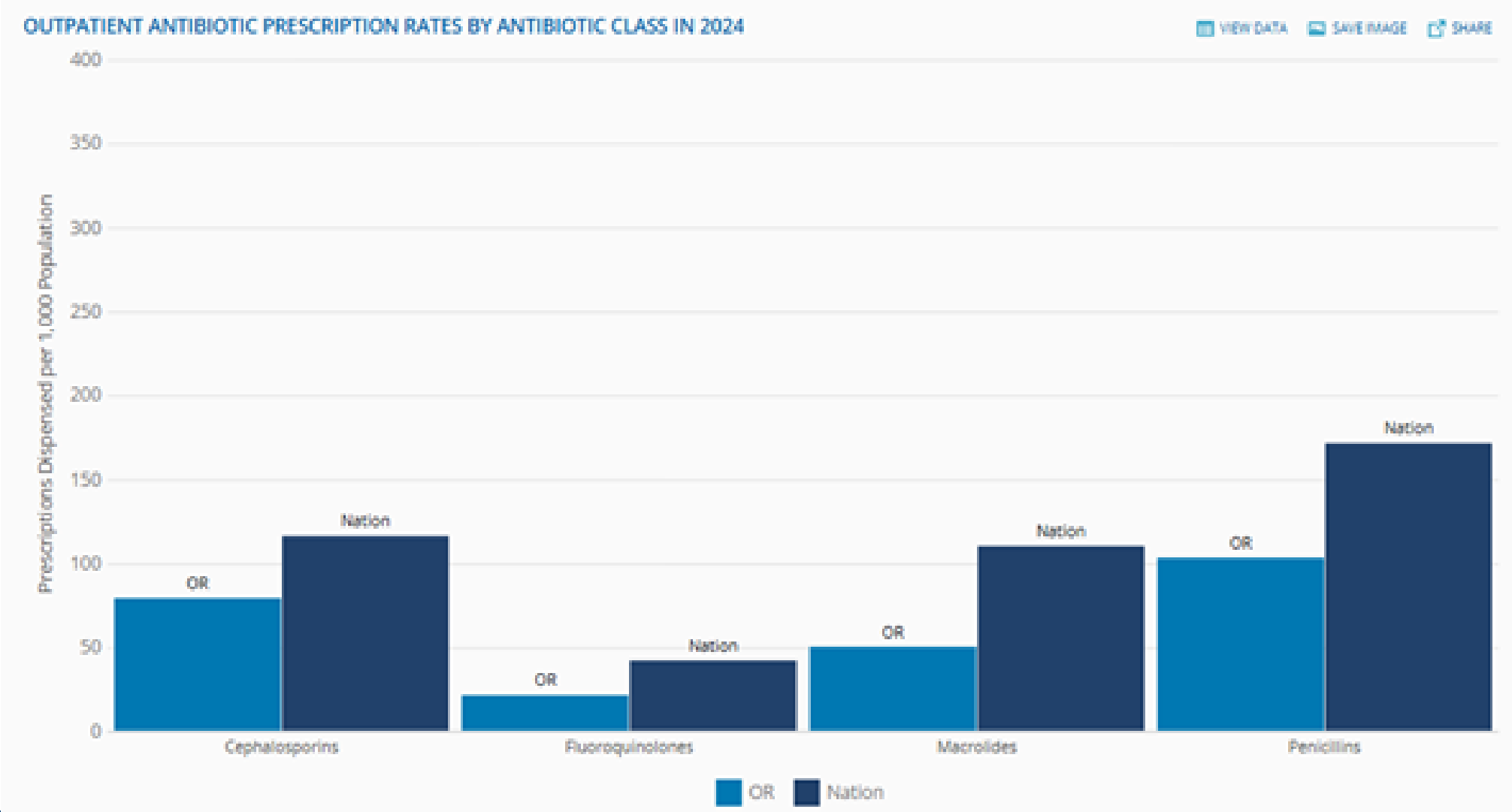


Honor Roll Recipients

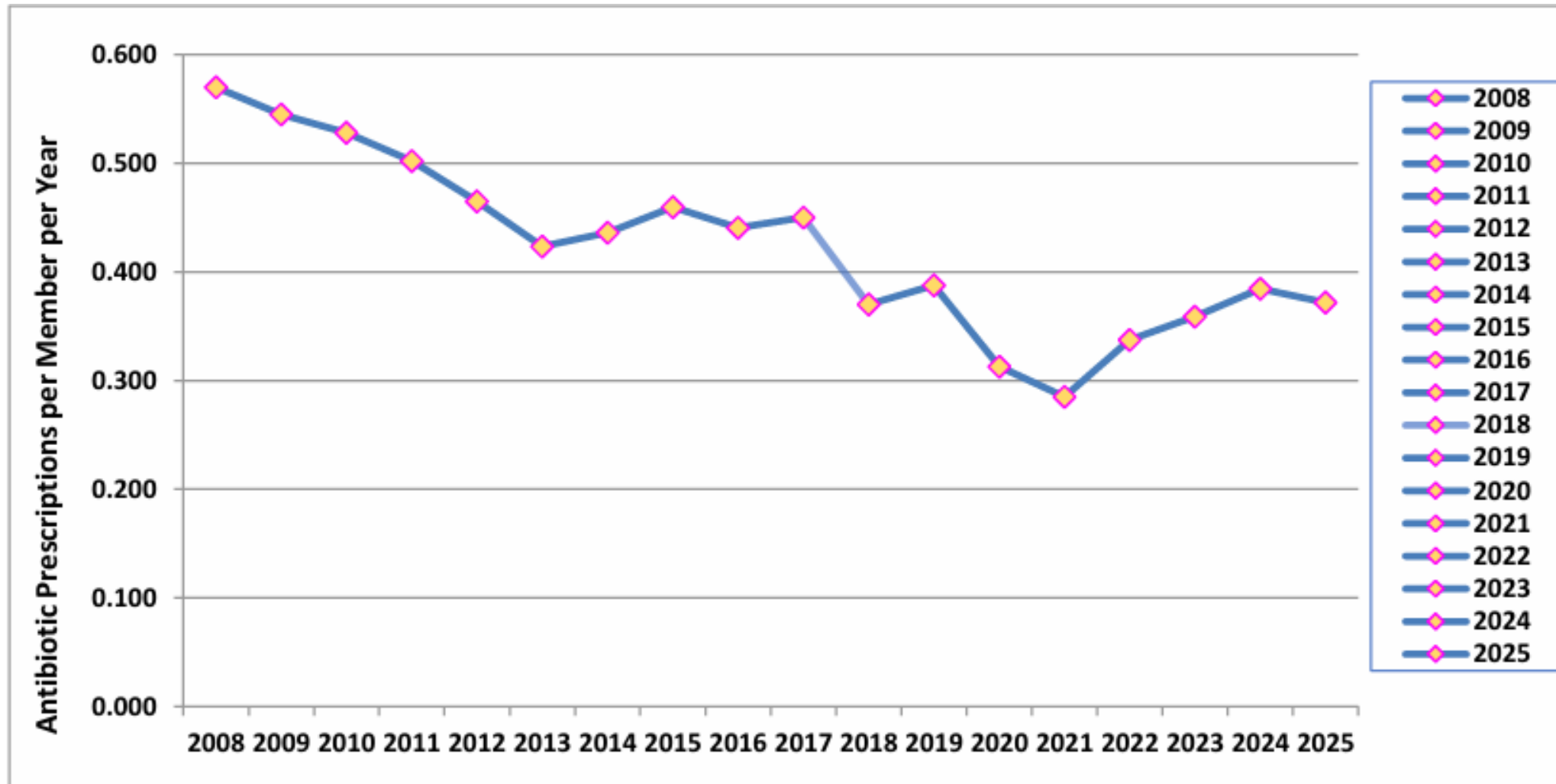
-  Critical Access Hospitals
-  Hospitals with Gold Status
-  Hospitals with Silver Status
-  Hospitals with Bronze Status



Outpatient Antibiotic Prescribing 2024: OR vs. US



Outpatient Antibiotic prescribing in Oregon 2008-2025



Outpatient – All Payer All Claims Data

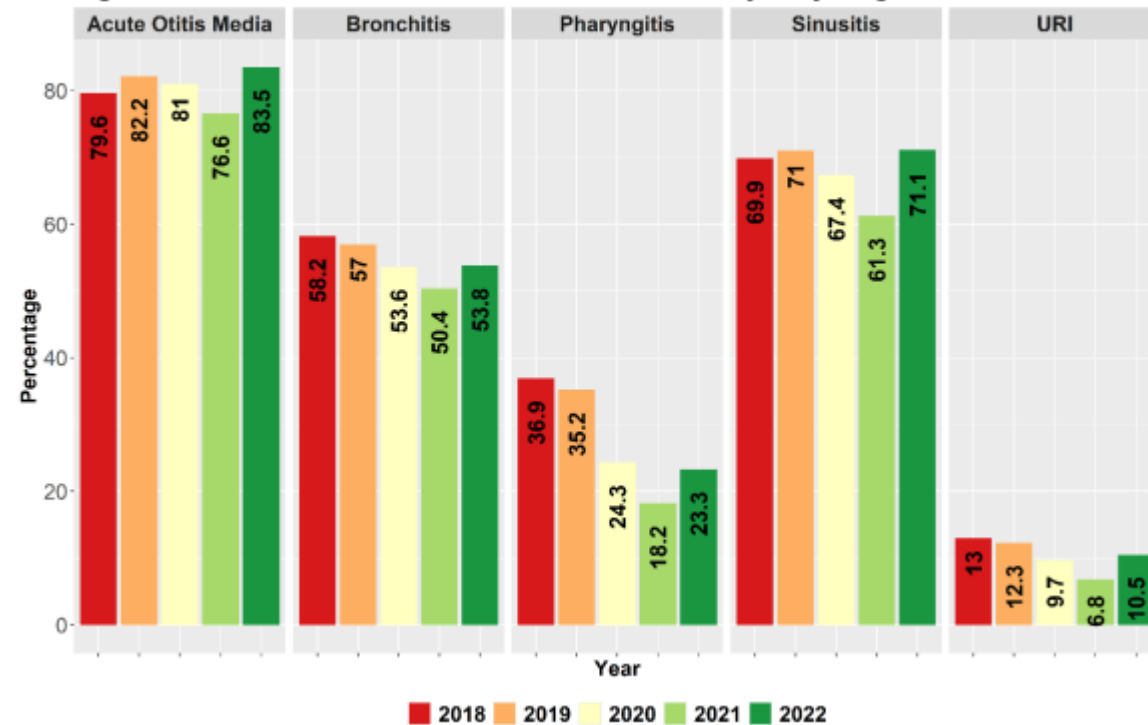
Antibiotic Prescribing in Oregon: Outpatient Settings 2018-2022

Healthcare-Associated Infections Program
Acute and Communicable Disease Prevention
Oregon Health Authority



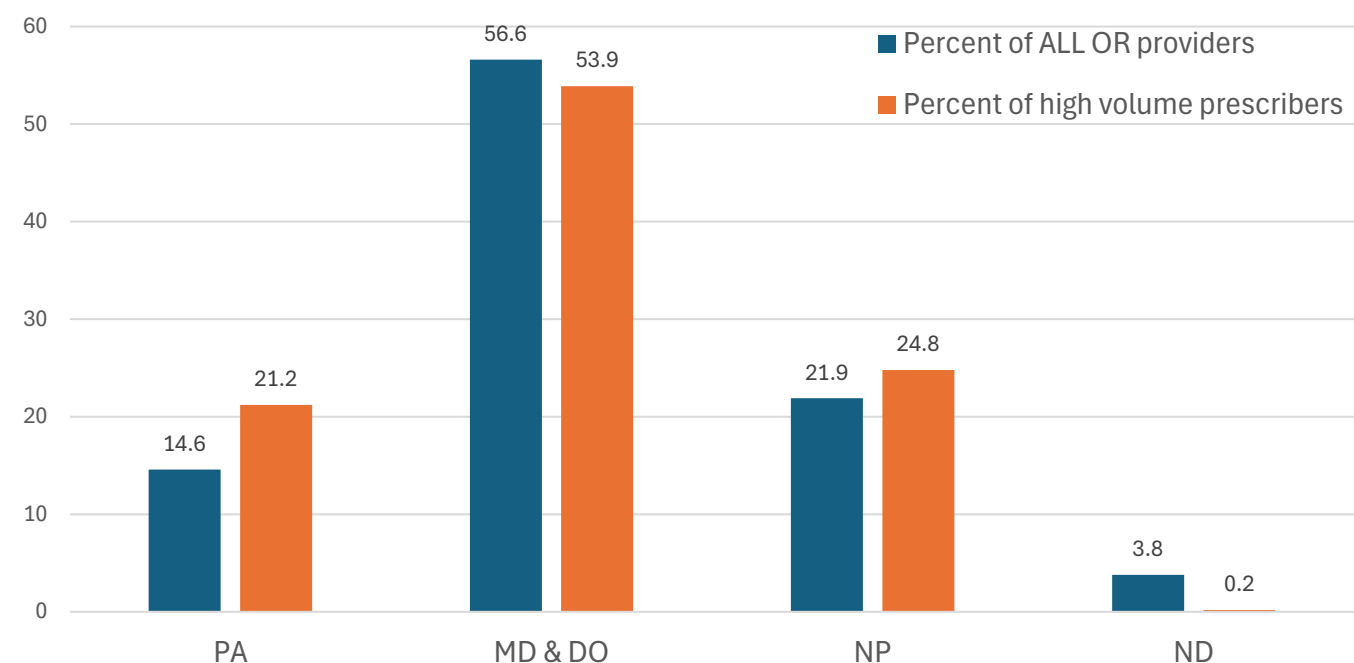
Oregon
Health
Authority

Figure 1. Antibiotic Use for ARTI Visits Within Three Days - by Diagnosis



Outpatient Provider Feedback Letters

Provider Type Representation Among High-Volume Antibiotic Prescribers



PUBLIC HEALTH DIVISION

Acute and Communicable Disease Prevention

Tina Kotek, Governor



May 15, 2025

[Recipient's Name]
[Street Address]
[City, State ZIP]

Dear [Recipient Name],

I am writing to ask for your support in promoting appropriate antibiotic prescribing to reduce patient harm caused by unnecessary antibiotic use and to combat the growing public health threat of antibiotic resistance. Antibiotic-resistant infections can be more difficult to treat, increase healthcare costs and threaten patient safety.¹ Oregon Health Authority (OHA) recently published a surveillance report showing a 26% increase in carbapenem-resistant *Enterobacterales* cases between 2019 and 2023.²

As you know, antibiotics are powerful tools for treating serious infections, however, they can also cause serious side effects such as *Clostridioides difficile* infections. *C. difficile* infection is the leading cause of antibiotic-associated diarrhea nationally and surveillance data from Klamath County showed 71% of cases were associated with prior antibiotic use, and 18% of cases experienced a recurrent *C. difficile* infection.³

As part of its efforts to combat antibiotic resistance, OHA analyzed antibiotic prescribing trends for outpatient acute respiratory tract infection visits using medical and pharmacy claims from 2018 to 2022.⁴ OHA is alerting providers who are writing a higher number of antibiotic prescriptions for these infections than other clinicians in our state.

You prescribe more antibiotics for acute respiratory tract infections than 90% of outpatient prescribers in Oregon — placing you above 86% of Physician Associates in Oregon.

While volume of antibiotic prescribing does not indicate inappropriateness, we hope you will review your antibiotic prescribing and consider taking actions to optimize antibiotic prescribing. Please visit CDC's website: www.cdc.gov/antibiotic-use which outlines their national campaign to raise awareness about antibiotic resistance and provides resources, guidance, and free continuing education credits for healthcare providers. We recognize antibiotic prescribing is a complex issue, but there are simple changes that you can make that have the potential for big impact. Two approaches include:

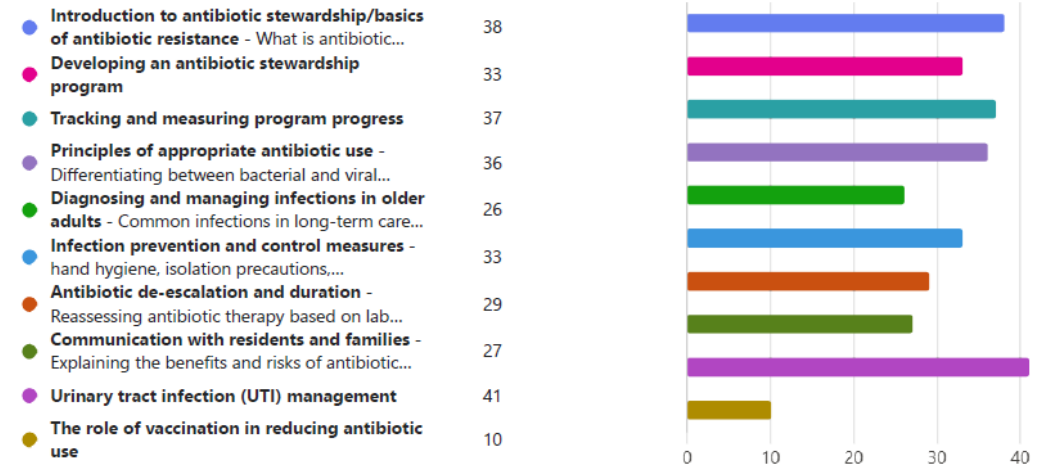
- Adopt Watchful Waiting and Delayed Prescribing: For conditions like acute otitis media or sinusitis, consider providing a postdated prescription and instruct patients to fill them only if symptoms do not improve.
- Adjust Patient Expectations: Educate patients on appropriate antibiotic use and focus recommendations on symptom relief options. This approach prevents overuse of antibiotics and ensures that patients feel heard, respected, and well-cared for.

800 NE Oregon Street, Ste 772, Portland, OR, 97232 | Voice: 971-673-1111 | Fax: 971-673-1100

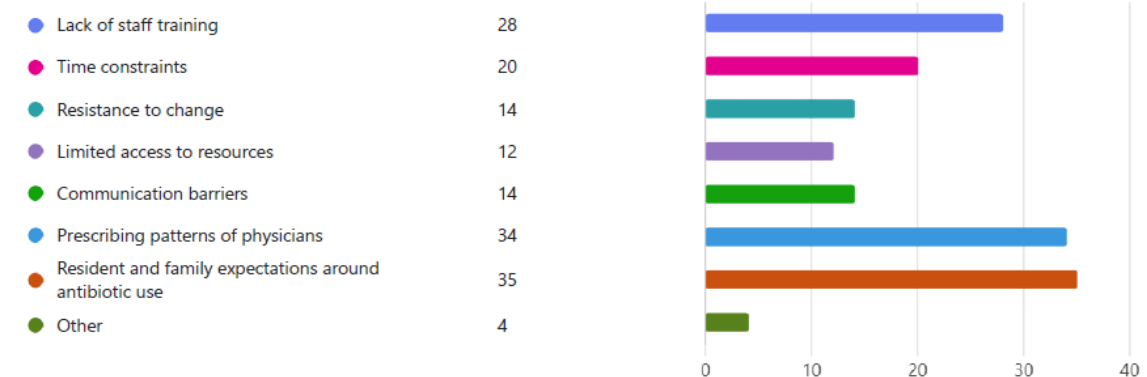
Long Term Care

- Collaboration with ODHS Aging and People with Disabilities
- Surveyed facilities about current state of antibiotic stewardship and barriers/needs
- Top barriers included lack of training and expectations of residents and families
- Top requests included live and online training modules

12. Which of the following topics would be of most interest to your facility?



11. What are the most significant barriers to implementing effective antibiotic stewardship activities in your facility? (apply)



Long-term Care Facility Learning Series

- Collaboration with ODHS Aging and People with Disabilities
- Monthly April 2025 - November 2025
- Attended by 45 LTCFs

APD Long-term Care Facility Antibiotic Stewardship Learning Series

Hosted by the Oregon Department of Human Services (ODHS) Office of Aging and People with Disabilities (APD), with support from the Healthcare-Associated Infections and Antimicrobial Resistance Program (HAI) at the Oregon Health Authority (OHA).

When:
Occurring the fourth Wednesday of each month between April 23, 2025 – September 24, 2025 from 1:00 – 2:00 PM

Audience:
All interested staff from APD-licensed long-term care facilities in Oregon, including Nursing Facilities (NF), Assisted Living Facilities (ALF), and Residential Care Facilities (RCF), including infection preventionists (IP), nursing staff, medical directors, and administrators.

Sessions:
Hour-long sessions will include a presentation on a specific topic relating to antibiotic stewardship, with additional time for Q&A and the sharing of best practices.

Benefits:

- Participants who attend all six sessions, either in-person or by viewing recorded sessions and marking their completion, will receive a certificate of completion
- The opportunity to supplement existing knowledge of the CDC Core Elements of Antibiotic Stewardship in long-term care and improve antibiotic use in long-term care facilities in Oregon
- The opportunity to share antibiotic stewardship best practices and network with other long-term care facilities around increasing antibiotic safety

Topics:

- An introduction to antibiotic stewardship and the basics of antibiotic resistance
- Developing an antibiotic stewardship program
- Tracking and measuring program progress
- Communicating the benefits and risks of antibiotic use with residents and families
- The role of vaccination in reducing antibiotic use
- Urinary Tract Infection (UTI) Management
- Infection Prevention and Control Measures

Contact: Ryan Frick, APD Population Health Epidemiologist at Ryan.Frick@odhs.oregon.gov.

 Oregon Department of Human Services
OR OREGON DEPARTMENT OF HUMAN SERVICES

Awareness Campaign

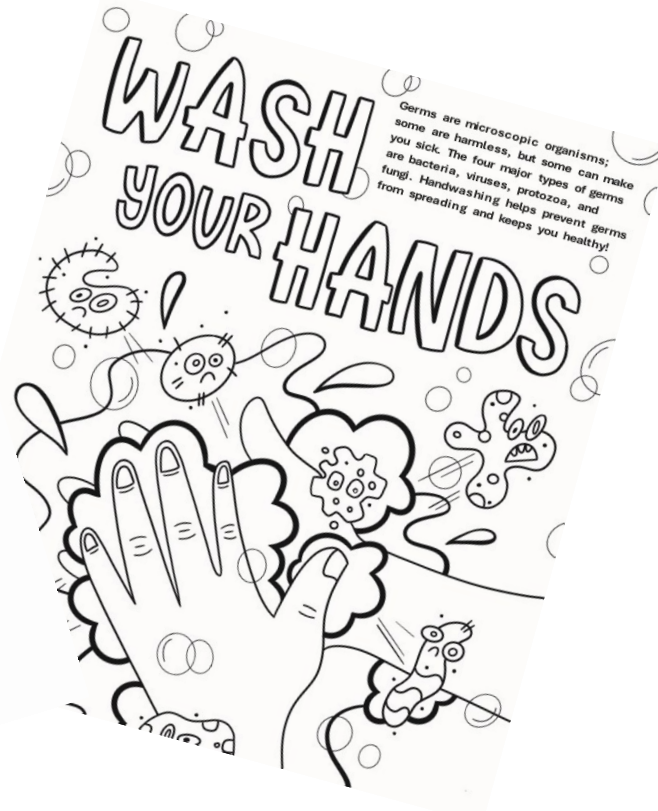
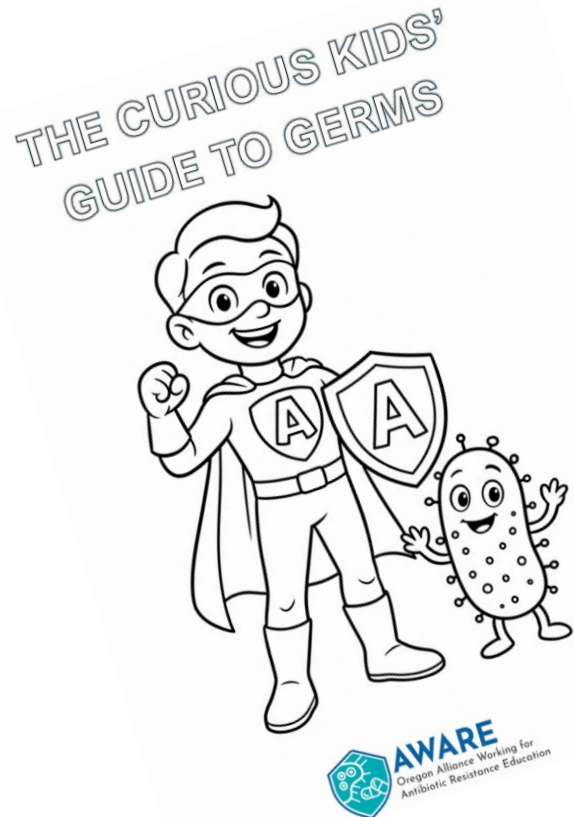
- “Special Edition” of the HAI Newsletter
- English and Spanish Social Media campaigns
- Oregon Health News article and Q&A





Community Outreach

Activity books for children



Community Events



Community outreach in eastern Oregon

- Radio ad focusing on appropriate antibiotic use
- Recorded and played in English and Spanish
- Wide span of listeners from Walla Walla in Washington state to John Day in central Oregon



Antibiotic Use in Dentistry



10% of antibiotic prescriptions in US are by dentists (25.3 million prescriptions in 2024)



Up to 80% of dental antibiotic prophylaxis prescriptions were not guideline recommended

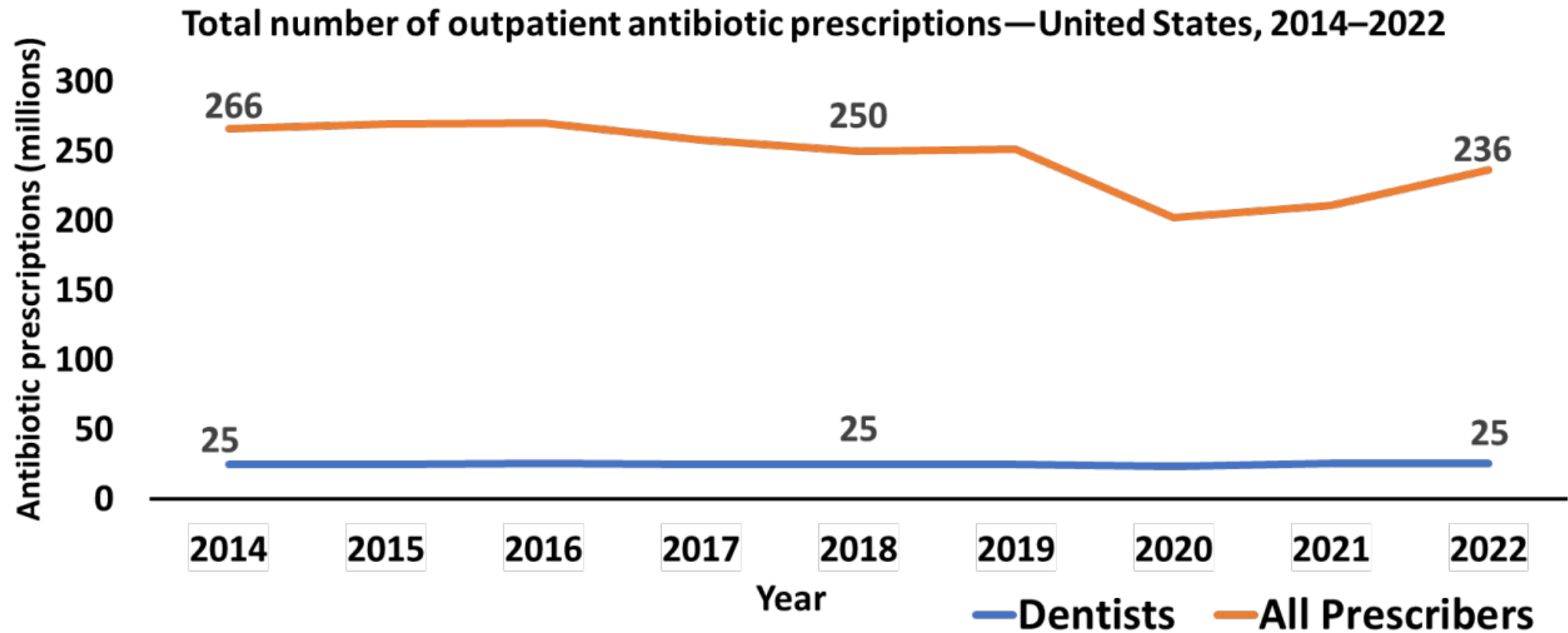
Huynh, Cam-Van T. et al. Outpatient antibiotic prescribing by general dentists in the US from 2018-2022. JADA, Vol 156, Iss 5, 382-289.e2

Hubbard, Colin C et al. "Appropriateness of Antibiotic Prophylaxis Before Dental Procedures, 2016-2018." *American journal of preventive medicine* vol. 62,6 (2022): 943-948.

[CDC Outpatient Antibiotic Prescriptions in the U.S., 2024](#)

Suda KJ, Henschel H, Patel U, Fitzpatrick MA, Evans CT. Use of Antibiotic Prophylaxis for Tooth Extractions, Dental Implants, and Periodontal Surgical Procedures. *Open Forum Infect Dis* 2018;5(1):ofx250.

Antibiotic prescriptions by **general dentists remained steady** while prescriptions by **all prescribers decreased**.



Source: CDC. Oral antibiotic prescribing by specialty United States based on IQVIA data.

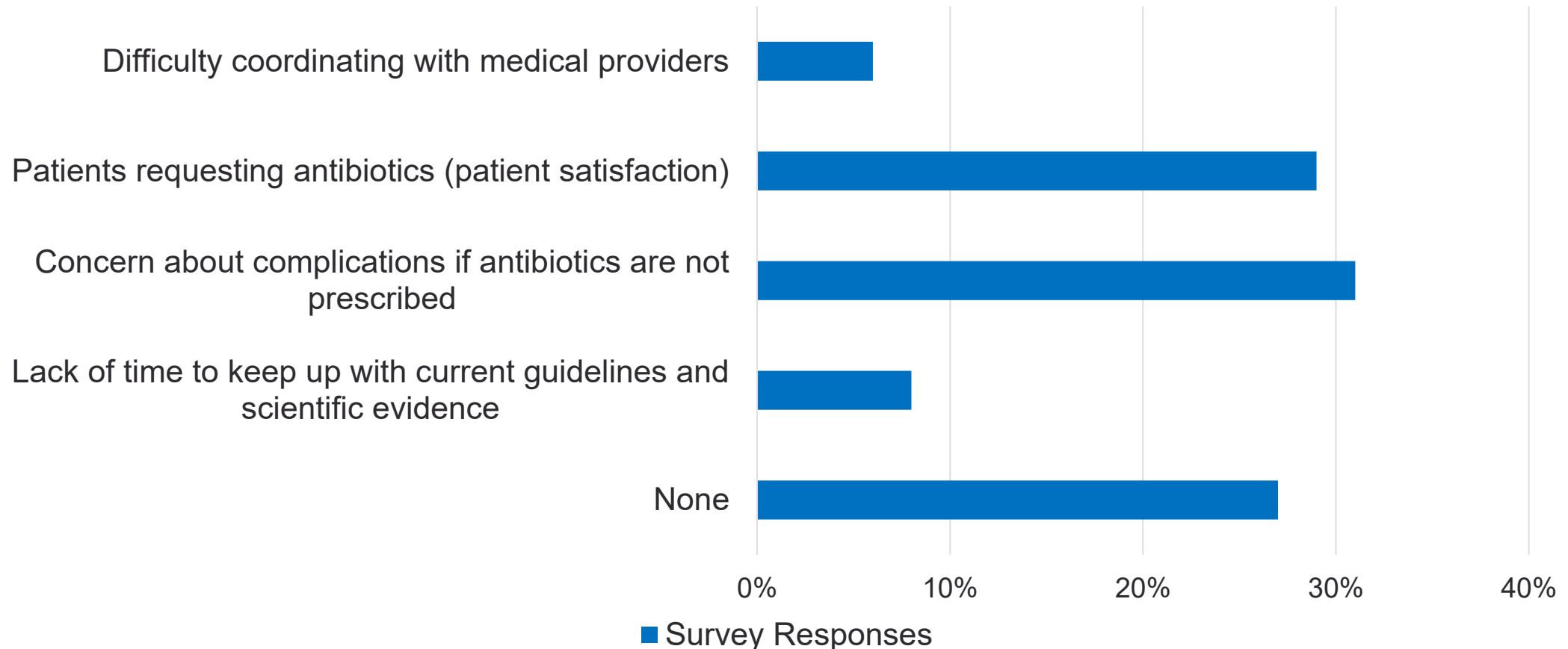
2026 Oregon Dental Conference



- HAI team implemented an antibiotic stewardship survey to dentists during the 3-day conference
- Total of 39 responses
 - Most respondents practice in general dentistry and are a single provider practice

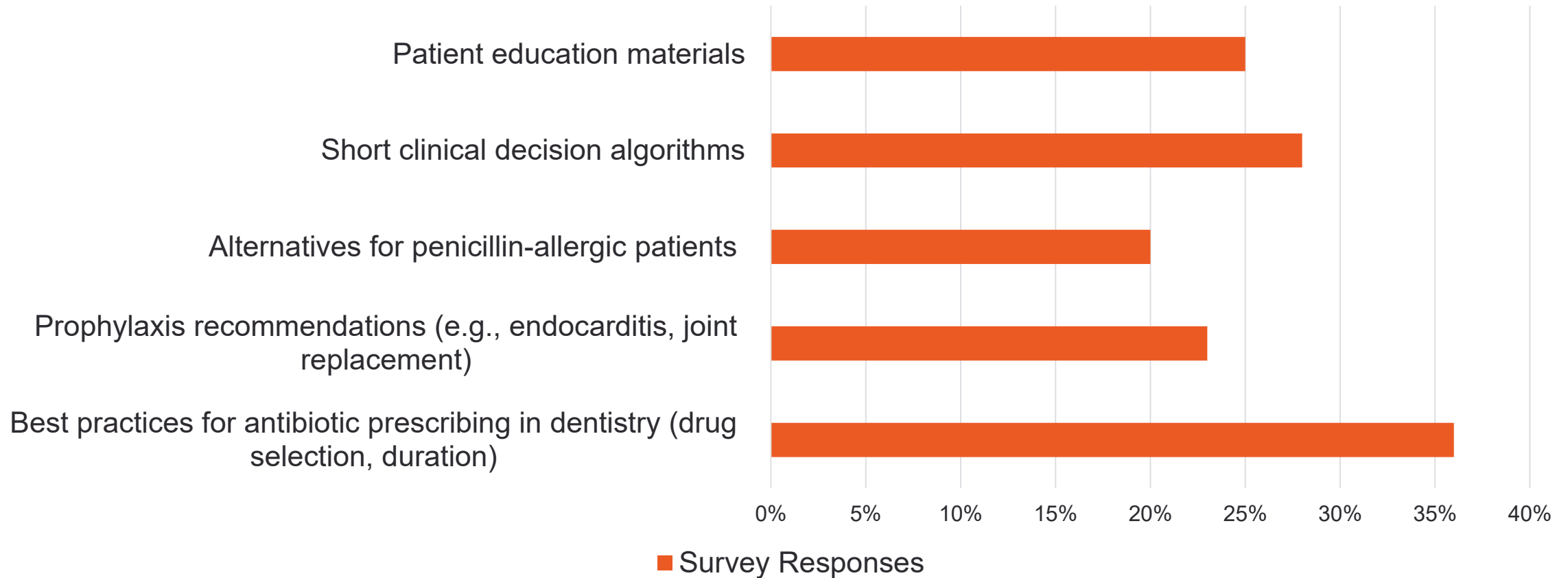
Dental Survey Results

What challenges do you encounter when deciding whether and how to prescribe antibiotics?



Dental Survey Results

What would be most helpful for improving your antibiotic prescribing practice?



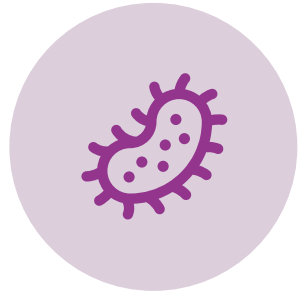
Dental Survey Results



80% of respondents reported feeling confident identifying when antibiotics are not indicated for common dental infections



92% of respondents reported they consider the impact on antibiotic resistance when prescribing antibiotics



Only 38% of respondents agreed that one dose of an antibiotic can cause *C. difficile*



59% of respondents stated patient expectations influenced their decision to prescribe antibiotics

Identifying Areas of Potential Interventions

- Commitment letter posted at dental office
- Patient education materials
- Short clinical decision algorithms
- Chairside prescribing guidance
- Continuing education (CE credit)
- Addressing reported penicillin allergy



Commitment

Demonstrate dedication to and accountability for optimizing antibiotic prescribing and patient safety.



Action for policy and practice

Implement at least one policy or practice to improve antibiotic prescribing, assess whether it is working, and modify as needed.



Tracking and reporting

Monitor antibiotic prescribing practices and offer regular feedback to clinicians, or have clinicians assess their own antibiotic prescribing practices themselves.



Education and expertise

Provide educational resources to clinicians and patients on antibiotic prescribing, and ensure access to needed expertise on optimizing antibiotic prescribing.

Possible Opportunities

- Partner with Oregon Dental Board to include antibiotic stewardship survey in annual newsletter and in the dental license renewal process.
- Create a commitment letter template that can be posted in dental offices stating their dedication to using antibiotics responsibly.
- Construct short clinical decision algorithms for conditions in which prophylactic antibiotics are commonly used and scenarios where antibiotic treatment is appropriate.



Thank you!

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Stewardship Epidemiologist

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Center for Public Health Practice

Acute and Communicable Disease Prevention Section

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